

Patent claims

[001] A fastening device for the non-positive positioning of an anchor piece formed with a depth stop such as a flange or yoke in a recess or on an insertion piece located in the recess, comprising at least one O-ring in an open annular groove or at least one annular ring on the one hand and at least one recess, e. g. in the form of an annular groove, for receiving the O-ring or annular ring on the other in either the curved surface of the anchor piece or the curved surface of the recess, characterised in that the curved surfaces (4, 10, 18) are conical surfaces whose cone angles are in substantial agreement and the annular groove (5) with which an opposite O-ring (12) or annular ring (19) engages is located at a lower level in the axial direction than the O-ring (12) or annular ring (19) of the anchor piece (7, 17) resting on the stop, e. g. the flange (9, 30).

[002] The fastening device according to claim 1, wherein adjacent open concentric annular grooves (5) are provided on the curved surfaces (4, 10, 18) of the anchor piece (7, 17) and in the recess (2) which, when the anchor piece (7, 17) has been inserted into the recess (2) until it reaches the stop, are opposite to each other in such a way that they are axially offset from each other and are adjacent to each other with a clearance, the O-rings (12) or annular rings (19) penetrating into the diagonally opposite annular grooves (5), while being elastically deformed, and releasing a force component (14) in the sense of a pressure against the stop.

[003] The fastening device according to claim 2, wherein the radii of the channels of the annular grooves (15, 11) of the anchor piece (7, 17) increase for respectively larger annular groove diameters from annular groove (5, 11) to annular groove (5, 11) and the O-rings (12) also comprise increasingly larger circular cross-sections.

[004] The fastening device according to claim 1 or 2, wherein the anchor piece (7) carries an O-ring (12) in each of the open annular grooves (11) provided in the conical curved surface of the anchor piece (7), except for the annular groove having the largest diameter, and that ribs (6) protruding in the recess (2) between the open annular grooves (5) engage between the O-rings (12) of the anchor piece (7) and, when the anchor piece (7) is pressed in, force the O-rings (12) into the annular groove (11) having the respectively next larger diameter, in which position they non-positively and positively engage with the annular grooves (5) of the recess (2) which are arranged at a respectively slightly lower level.